Proceedings of the Iowa Academy of Science

Volume 38 | Annual Issue Article 80

1931

Analysis of Intensity in Piano Playing

D. A. Rothschild
State University of Iowa

Let us know how access to this document benefits you

Copyright ©1931 Iowa Academy of Science, Inc.
Follow this and additional works at: https://scholarworks.uni.edu/pias

Recommended Citation
Rothschild, D. A. (1931) "Analysis of Intensity in Piano Playing," *Proceedings of the Iowa Academy of Science, 38(1),* 231-231.
Available at: https://scholarworks.uni.edu/pias/vol38/iss1/80

This Research is brought to you for free and open access by the Iowa Academy of Science at UNI ScholarWorks. It has been accepted for inclusion in Proceedings of the Iowa Academy of Science by an authorized editor of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.

proportion, balance, rhythm, and emphasis were varied in order to produce different effects. These were submitted to experts and non-experts by means of the paired comparisons method together with verbal reports. From these data a determination was made as to why certain factors are basic.

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

ANALYSIS OF INTENSITY IN PIANO PLAYING

D. A. ROTHSCHILD

By means of the Iowa Piano Camera, which gives an objective record of movement of the keys of the piano, and a vacuum tube volt-meter, which measures changes in intensity on the decibel scale, we are able to measure changes in the action, and intensity changes of the piano, that is, we are able to study the relation of the intensity changes of the piano to that of the action.

The first study consists of maximum relative changes in intensity for each key on the piano. The point of maximum intensity when each key is struck with a given force is between the fourth and fifth octave, with the minimum points at each end. There are resonance points, which amplify and retard the intensity of the tone.

In studying the intensity changes due to damping, we find a relation between strength and duration of the intensity after the damping, and (a) its relation to pressure applied to the key (b) relation to length of time pressure applied (c) relation to position of key on the piano and (d) relation of maximum intensity to damped and undamped keys.

STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.

REMEDIAL MEASURES IN PITCH INTONATION

LAWRENCE E. EBERLY

Attempts of teachers of voice and violin to improve the pitch intonation of their pupils have been exceedingly wasteful of time, due to the tendency of the ear to be either too inaccurate or too easily satisfied in the matter of small differences of pitch. The tonoscope, an instrument now available for use in the music studio, provides an immediate objective visual check on the accuracy of